Preliminary remarks

This user and instruction manual is applicable for the products **LISA TOUCH-Protect** and **LISA AREA-Protect. LISA AREA-Protect** serves to secure large-scale installations such as museum halls and pedestals. A significant component of **LISA AREA-Protect** applications is **LISA TOUCH-Protect. In order to not needlessly stretch the content of this manual, the following chapters will generally refer to LISA TOUCH-Protect.**

General Notes

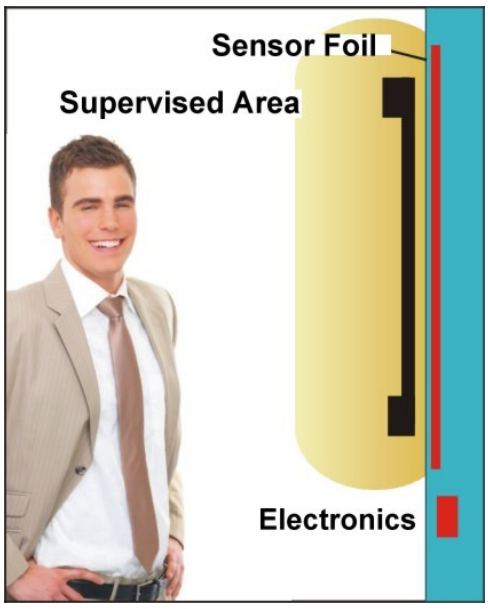
Dear customer,

we would like to congratulate you on your purchase of **LISA TOUCH-Protect. LISA TOUCH-Protect** is high-performance electronic device to secure art and cultural assets. **LISA TOUCH-Protect** efficiently secures exhibits against vandalism, theft and damages resulting from careless touching through visitors. Paintings, graphic art, statues, sculptures, cabinets and even large-scale installations can be supervised with **LISA TOUCH-Protect.**

- Please read the following product information carefully. It includes essential information on aspects of installation and usage of **LISA TOUCH-Protect**.
- The labeling oft he casing of **LISA TOUCH-Protect** is in English.

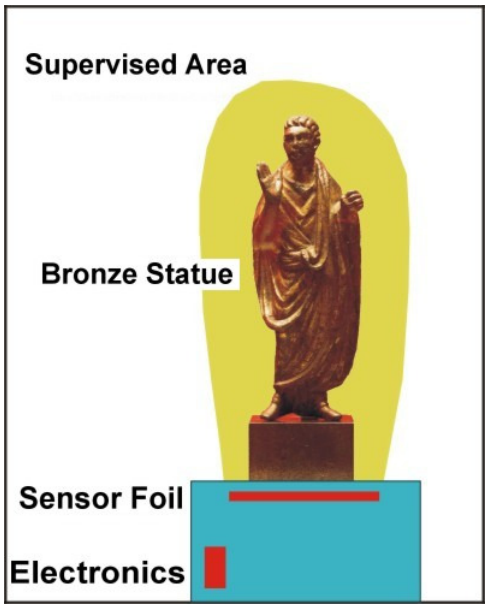
Functional description

LISA TOUCH-Protect is able to secure and supervise standing as well as hanging art and cultural objects. The supervision is realized by electronic alarm systems than virtually cover the objects with a “protective shield”. If someone intrudes this invisible “protective shield” an alarm signal is triggered immediately. What is unique about **LISA TOUCH-Protect** is the fact that it works with a sophisticated early warning system. Visitors are warned ahead of time by a discreet tone which does not disturb the regular operation of the exhibition. Only if the visitor does not leave the zone allocated to the early warning system or if he further approaches the secured object, will the alarm be triggered.



© 2009 by heddier electronic GmbH

The operational modes and the sensitivity can easily be adjusted by a rotary switch. Additional to the normal operational mode – such as permanent alarm and silent alarm – it is also possible to set up the proximity alarm as described above. All sensors are sensor circuit boards and can be used as “nailable” sensor meshes and sensor foils.



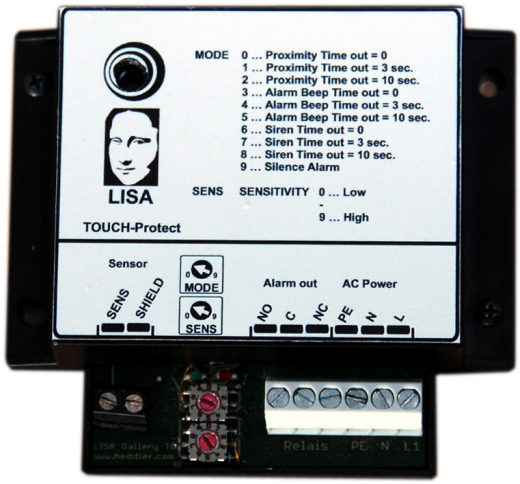
Scope of delivery

The following components are included in the delivery of **LISA TOUCH-Protect:**

- **LISA TOUCH-Protect**
- Installation and user manual in English

Optional Equipment:

- Sensor circuit boards for wall installation
- Nailable sensor mesh
- Sensor foils for floor installation
- Connection cables



Installation and start up

The following example describes the installation and securing of a painting. The securing of pedestals, statues, cabinets and exhibition areas works similar, only the sensor plates are different. When securing item including metal, **LISA TOUCH-Protect** couples into the object thus transforming the entire object into an active sensor area.

Important information:

- *The Installation of **LISA TOUCH-Protect** should be implemented by a professional. Operations that include 230 Volt AC network are only legitimate if done by a professional and are dangerous to life if conducted improperly.*

© 2009 by heddier electronic GmbH

1. Checking of delivery contents

Please check the components included in the delivery for completeness (see scope of delivery). In case of any query, please contact your supplier.

2. Installing the sensor plates

The sensor plates usually consist of two conductive panes which are on top of each other (active sensor plates and rear shielding). In this example, a sensor plate (material aluminum laminate trademark Dibond) featuring a pre-assembled connection cable is attached to a wall using ordinary screws. The painting to be secured is later hung in front of the sensor plate. The installation of the sensor plate should be conducted in a fashion that it cannot be detected later on. Similarly, it is possible to install the sensor plate inside the exhibition wall or beneath flush-mounted inserts. When installing the sensor plate it is important to avoid any shorts between the front and the rear (active sensor plate and shielding). A coaxial cable is used as a connection cable (1-pole shielded).

The maximum length of the connection cable linking the sensor plate and LISA TOUCH-Protect is 15 m. If there are more objects that are to be secured by LISA TOUCH-Protect within the direct vicinity, a minimum distance of 30 cm is required between the individual sensor plates. All devices need to be switched on simultaneously when starting the system. A correct grounding is required to ensure perfect functioning.

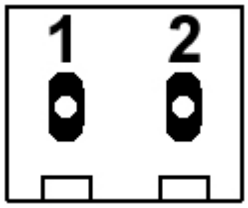
3. Installing LISA TOUCH-Protect

The installation of **LISA TOUCH-Protect** should be conducted close to the painting and in a fashion that it cannot be detected later on (e.g. behind an inspection opening). An installation close to the painting allows a direct audio alarm that immediately alerts the visitor. A maximum volume of the audio signal requires a sound tube inside the exhibition area.

© 2009 by heddier electronic GmbH

4. Connecting the sensor plate with a cable to LISA TOUCH-Protect

The sensor plate (consisting of active sensor plate and rear shielding) is connected to **LISA TOUCH-Protect** through the shielded connection cable. When connecting, it is important to mind the polarity of the active sensor plate and the shielding. The **sensor plate's rear is the shielding and its front is the active sensor plate.** The active sensor plate has to face the art object. The illustration shows the terminal clamp on the **LISA TOUCH-Protect** circuit board.



1 = screw clamp active sensor plate (front)
2 = screw clamp shielding (rear)

5. Adjusting operating mode and sensitivity

It is necessary to adjust the operating mode and the sensitivity in order to operate **LISA TOUCH-Protect.** The adjustments are carried out via two 10pole rotary switches. Please use a small slotted screwdriver. Altogether, there are 10 different operating modes and 10 possible sensitivities.

Adjustment of the rotary switch for operating mode

Position	Marking on casing
0	Proximity Time out = 0
1	Proximity Time out = 3 sec.
2	Proximity Time out = 10 sec.
3	Alarm Beep Time out = 0 sec.
4	Alarm Beep Time out = 3 sec.
5	Alarm Beep Time out = 10 sec.
6	Siren Time out = 0 sec.
7	Siren Time out = 3 sec.
8	Siren Time out = 10 sec.
9	Silence Alarm

The alarm interval indicates how long the alarm can be heard after exiting the secured area. Principally, the external alarm output is (potential-free relay output) is activated every time the alarm is set off. This way, external alarm systems can be connected as well.

© 2009 by heddier electronic GmbH

Adjusting the rotary switch for sensitivity

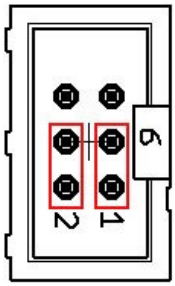
The sensitivity can be adjusted on 10 levels. “0” means low sensitivity, “9” means maximal sensitivity. Depending on the intensity of the respective sensor in use, it is possible to reach a maximum range of detection of 70 cm.

Further information on the adjustment of the individual operating modes and he sensitivity can be found under “Survey of connections, settings, and outputs”, points 5 und 6.

6. Setting up the Measurement Mode

If you wish to implement more than one LISA Touch-Protect electronic system featuring sensor covers in the immediate vicinity to one another (with a radius of approx. 5 m within the range of the sensor cover), the measurement mode of each Touch-Protect has to be internally set up differently. The measurement mode can be adjusted on 4 levels via 2 jumpers. In order to set up the measurement mode it is necessary to first open the case. The set up requires PIN1 to PIN4 of the 6-pole plug.

measurement mode	jumper (PIN1 /PIN3)	jumper (PIN2 /PIN4)
1 (default)	open	open
2	open	plugged
3	plugged	open
4	plugged	plugged

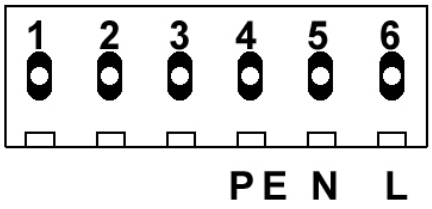


7. Connecting a power supply

Before beginning your work on the 230V AC network, please make sure to switch of the supply voltage and control the absence of voltage of the feeders.

Power supply is carried out via 230V AC network, 50 Hz (standard European power supply). On request, it is possible to order variants featuring 115V AC network (North America).

A secure operation of LISA TOUCH-Protect requires proper grounding. It is necessary to hook up an external grounding. Malfunctions are usually due to incorrect ground plane. Malfunctions are usually a result of incorrect ground wiring schemes. Our technical support will gladly give you further information: +49 (0) 2546 911-25.

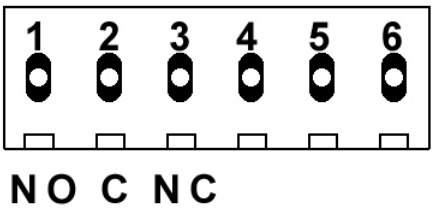


4 = PE = separate ground wire
5 = N = neutral conductor
6 = L = phase

© 2009 by heddier electronic GmbH

8. External Alarm output (optional)

If desired, the external alarm output can be connected to another audio or visual alarm transmitter. It is also possible to connect it to an intrusion detective system. **The maximum switching capacity of the relay is 250 V AC, 1 A.**



1 = **NO Normally Open - switching output**
Normal operation = contact to C open
Alarm status = contact to C closed
2 = **C Kontakt - switching input**
3 = **NC Normally Close – switching output**
Normal operation = contact to C closed
Alarm status = contact to C open

9. Setting up the art object

After the successful installation the painting can now be hung up before the sensor plate. **If you use a nail please make sure to avoid shorts between the active sensor plate and the shielding.** It is possible to order special "nailable" sensor plates.

10. Switching on LISA TOUCH-Protect

In order to activate **LISA TOUCH-Protect** it is now necessary to switch on the mains voltage. **LISA TOUCH-Protect** calibrates itself automatically when being started. This procedure may take a few seconds. **The calibration ends with a short audio signal. Afterwards, LISA TOUCH-Protect is ready to operate. The calibration is repeated every time it is switched on and off. You should not remain in the area that is to be supervised during the time of the calibration.** Should there be no audio signal, check the mains voltage first. If the mains voltage is correct and there still is no function, control the output of the status LEDs. Please see the "Survey of connections, settings, and outputs" Point 3 „Status-LEDs" for further information or call our support team under +49 (0) 2546 911-25.

© 2009 by heddier electronic GmbH

Tips for installing Touch/AreaProtect

1) Ground Connection

Make sure to create a sufficient and interference-free ground connection. LISA Touch-Protect sensors have to be hooked up to a ground point. The connection to the mass point should be implemented with a separately guided ground cable (preferably featuring a diameter of 4 mm). The connection to the mass point should be a star ground wiring scheme.

The PE lead is not fit for functioning as a mass point. Please see the respective document on our internet site for further information:

http://www.weka.de/elektrosicherheit-produktion/6586-Y29udGVudF9pZD0yNzEwMTc2NA-~aktuelles~news~news_detail.html

The main causes of error when installing capacitive sensors is choosing an inferior mass point or an incorrect ground wiring scheme!

2) Items made of metal in the sensors‘ vicinity

Items made of metal located in the sensors‘ vicinity have to be grounded. Please see point 1) for further instructions. Be careful to make sure that there are no grounded metallic objects in the area monitored by the sensors as this could have a negative effect on the result.

3) Implementation of rear shielding

Rear shielding is mainly employed whenever sensors are used in areas that are prone to possible interferences and disturbances. These areas can either be ground and wall sections, or metal carriers and cable routings. Generally, the rear shielding should be larger than the sensor cover. We recommend the use of original heddier sensor covers. The sensor covers have to be connected via a suitable coaxial cable. We recommend the use of RG-58U-cables and BNC plug connections.

4) Laying and installing of cables and sensors

Principally, the cable routing should be kept as short as possible. Especially sensor and ground cables extending longer distances should not be laid in parallel and at short distances to one another.

Cables and sensors have to be located in a fixed position. Moving and any modification of the location during operation are not permitted and may trigger off an alarm.

5) Implementation of several sensor covers within one sensor electronic system

Principally, it is possible to hook up several sensor covers to one LISA TouchProtect electronic system. To do so, we offer BNC-T-adaptors. Normally, it is thus possible to

© 2009 by heddier electronic GmbH

hook up 2-3 sensor covers to one electronic system. The amount may vary depending on the sensor cover's size and operating conditions.

6) Implementation of several sensor electronic systems

It is principally possible to use several sensor electronic systems featuring separate sensor covers to protect one large-size exhibit. Here, however, one needs to pay attention to the fact that the neighboring sensor covers have to operate on different frequencies. It is possible to configure up to 4 different frequencies. Neighboring sensor covers should have a minimum distance of approx. 40 cm.

Please ensure that the sensor and ground cables are properly layed (see point 4). Especially ground and sensor cables of neighboring sensor covers have to be layed separately.

7) Miscellaneous

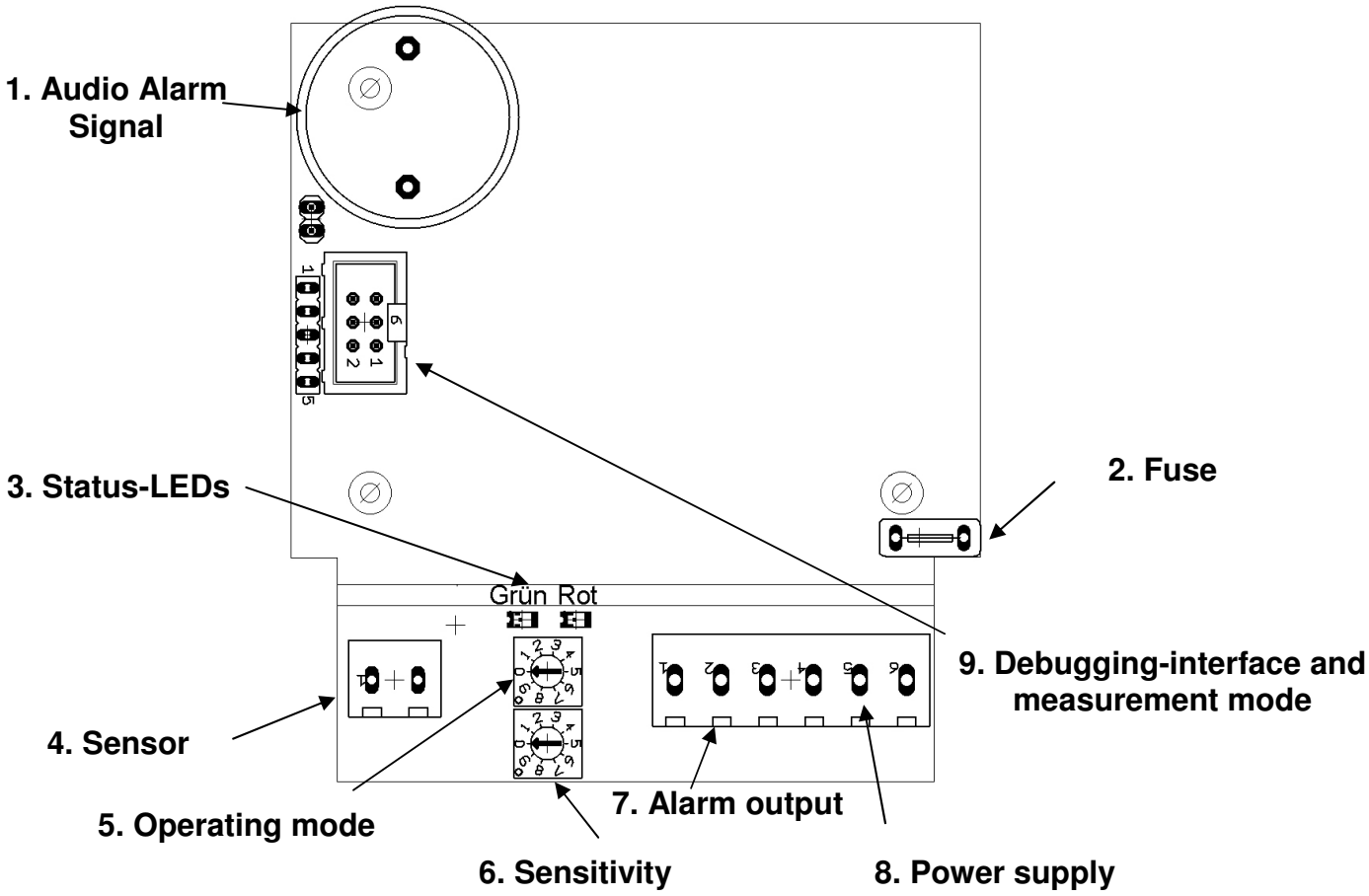
Please note the following suggestions for an error-free installation:

a) Check each sensor electronic system right after the installation for its proper functioning. Simultaneously, also control neighboring sensor electronic systems.
b) Avoid interferences due to e.g. defective starters in neon tubes, unshielded electric machines, and wireless and radio equipment.
c) Wait for the calibration interval of the LISA TouchProtect systems. The beep following the switching on signals the end of the calibration interval. During this time you must not stay within the monitored area.
d) Please read the user manual. Our technical support hotline will be happy to be of assistance should you encounter any problems: +49 (0)2546 911 25

In addition to well-known possibilities, all our devices and systems have a PC-debugging-interface which identifies external interruptions and interferences. On request, the PC-debugging-interface can be readout by our technicians or trained mechanics.

© 2009 by heddier electronic GmbH

Survey of connections, settings, and outputs



1. Audio Alarm Signal

The audio alarm signal is issued depending on the respective operating mode that is activated (see operating mode Point 5).

2. Fuse

The 0,25 A fuse protects electronics against overload. In case of damaging or destruction, the fuse can be replaced by our service center.

3. Status-LEDs

The status-LEDs signal the current condition of the **LISA TOUCH-Protect** electronics.

© 2009 by heddier electronic GmbH

green LED on: **LISA TOUCH-Protect** switched on
green LED out: **LISA TOUCH-Protect** switched off.
red LED out: **LISA TOUCH-Protect**: no serious incidents.
red LED on: shines as long as the sensor is activated.
red LED blinking: error code status

Error code list:

Error code	Error code description
1 x blink	Sensor connection error Possible source: 1) Short between active sensor plate and shielding 2) Sensor plate not connected appropriately
2 x blinking	Internal electronics error Please contact our technical support!

4. Sensor

The active sensor is connected to PIN1 and the shielding is connected to PIN2. The sensor connection cable should not exceed a length of 15 m.

5. Operating mode

There are 10 different operating modes for operating **LISA TOUCH-Protect,** all can be adjusted via a rotary switch. Principally, there are 4 different groups of operating modes: **Proximity, Alarm Beep** (permanent alarm signal), **Siren** and **Silent Alarm.** Additionally, it is possible to set up a **time out function** in each operating mode group (silent alarm excluded).

Time out means that the external alarm output and the alarm signal continue after the previously set up interval has expired. This allows, for example, the staff to check a triggered alarm in a reasonable amount of time.

Proximity Mode

In the proximity mode, the audio alarm output works similar to a parking assistance system in a vehicle. It differentiates between a forewarning zone and an alarm zone, i.e. the closer a person approaches the sensor plate (intrusion of the forewarning zone), the shorter the interval between individual audio signals. Once the intruder reaches the alarm zone or remains longer than 5 seconds within the forewarn zone, the audio permanent signal tone is triggered and the external alarm is thus issued.

© 2009 by heddier electronic GmbH

Alarm Beep (permanent alarm)

In the alarm beep operating mode, an audio signal is triggered as soon as the alarm zone is trespassed. Additionally, the external alarm output is switched on as well.

Siren alarm

The siren mode replaces the permanent alarm signal by a siren signal if an intruder trespasses the secured zone. The external alarm output is also switched on.

Silent alarm

The silent alarm mode does **not issue an audible signal**. Only the external alarm is triggered. There is no time out. The relay switches as longs as the trespasser remains within the secured zone.

Overview of adjustments of the rotary switch for the operating mode

Position	marking on casing
0	Proximity Time out = 0
1	Proximity Time out = 3 sec.
2	Proximity Time out = 10 sec.
3	Alarm Beep Time out = 0
4	Alarm Beep Time out = 3
5	Alarm Beep Time out = 10
6	Siren Time out = 0
7	Siren Time out = 3
8	Siren Time out = 10
9	Silence Alarm

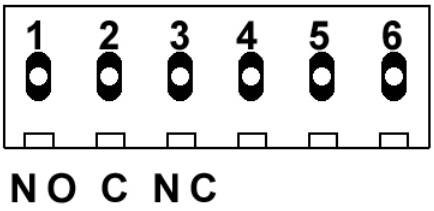
6. Sensitivity

There are ten levels to adjust the sensitivity. „0“ means low sensitivity, „9“ means maximum sensitivity.

7. External alarm output

The external alarm output is not secured. The maximum voltage supply of 1A must not be exceeded.

© 2009 by heddier electronic GmbH

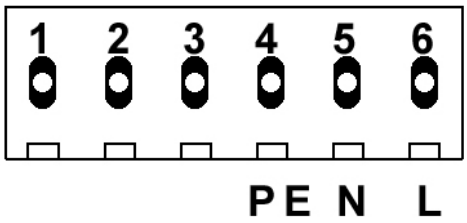


1 = **NO Normally Open – switching output**
Normal operation = contact to C open
Alarm status = contact to C closed
2 = **C contact – switching input**
3 = **NC Normally Close – switching output**
Normal operation = contact to C closed
Alarm status = contact to C open

8. Power supply

Power supply is carried out via 230V AC network, 50 Hz (standard European power supply). On request, it is possible to order variants featuring 115V AC network (North America).

A secure operation of LISA TOUCH-Protect requires proper grounding. Should grounding via the protective earth conductor PE not be sufficient, it is necessary to connect an external grounding.

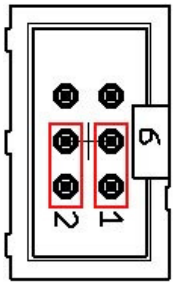


4 = PE = separate ground wire
5 = N = neutral conductor
6 = L = phase

9. Debugging-interface and measurement mode

The debugging-interface identifies external interruptions and interferences. On request, the PC-debugging-interface can be readout by our technicians or trained mechanics. Furthermore, when using the LISA Touch-Protect electronic system in the direct vicinity, it is necessary to set up the measurement mode has individually. The measurement mode can be adjusted on 4 levels via 2 jumpers. In order to set up the measurement mode it is necessary to first open the case. The set up requires PIN1 to PIN4 of the 6-pole plug.

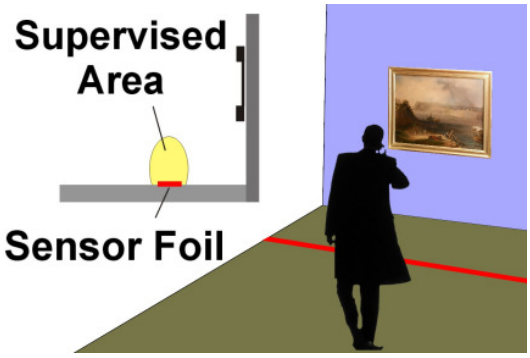
measurement mode	jumper (PIN1 /PIN3)	jumper (PIN2 /PIN4)
1 (standard)	open	open
2	open	plugged
3	plugged	open
4	plugged	plugged

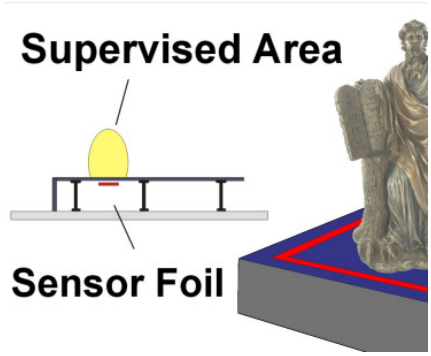


© 2009 by heddier electronic GmbH

LISA AREA-Protect

LISA AREA-Protect is a combination of different sensor technologies by heddier electronics GmbH. A significant component of **LISA AREA-Protect** applications is **LISA TOUCH-Protect.** Meters of touch foils can be laid on floors and beneath carpets, stone plates and wooden floors. They build up a highly-secured area up to a height of 70 cm.





Thanks to appropriate combinations of different sensor technologies it is possible to realize intelligent and customer-friendly security concepts.

We would be pleased to advise you in the implementation of our LISA AREA-Protect components!

Applications LISA AREA-Protect:

- Supervision of exhibition areas
- Supervision of pedestals
- Supervision cabinets, installation of sensors beneath large-scale sensors
- Supervision of art objects on museum walls through large-scale sensors
- Supervision of historic furniture
- Supervision of emergency exits

Components for LISA AREA-Protect

One-Zone-Radar Sensor (article RS-1Z)

Supervising of air space of high, non-metallic exhibits and objects. The maximum detection range is 2,5 m.

© 2009 by heddier electronic GmbH

Mirrormaid-Sensor (article MM-S or MM-Kit)

Inexpensive capacitive field sensor for direct connection of sensor wires. Serves to protect glass cabinets and other three-dimensional objects.

IAP-1 Interactive Audio player (article IAP-1)

Natural voice output for alarm systems. Makes possible to include messages such as **"Please step back"**. Only if these are not met by the intruder, the alarm is triggered and supervising staff will be called.

MM-Controller (article MM-C)

Intelligent alarm controller including freely programmable firmware.

Please visit our website for further technical information on our products: www.heddier.com

Technical Data

LISA TOUCH-Protect

Operating voltage:	230 V~ 50/60 Hz
Max. power consumption:	~15 mA
Potential-free switching output:	250 V AC, 1 A
Max. switching capacity:	250 VA

Subject to technical modifications and errors. We gladly advise we you on the installation.technical support hotline **+49 (0) 2546 911-25** or email support@heddier.com .

© 2009 by heddier electronic GmbH